

INJURIOUS AND BENEFICIAL INSECTS FOUND ON THE  
ORANGE TREES OF FLORIDA.

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Since my discovery of the mite found preying upon the eggs of the Orange Scale Insect (*Aspidiotus Gloverii*), I have been studying the insects found on the Orange tree, and my study has resulted in bringing to light many curious insects, of which I submit the following brief description. Those interested will find a full account of their habits in the *Florida Agriculturist*.

*Glover's White or Yellow Orange Mite.*

*Acarus? Gloverii*, n. sp.—Soft, flattened, oval, of a pale yellow color, with a broad pinkish flesh-colored stripe extending from thorax down the middle of abdomen, terminating at hinder edge, which is obtuse; legs eight, thin, finely pubescent, with two claws. Length about .01 of an inch. In company with them are often seen pale flesh-colored specimens, which are the immatured ones.

I find it mentioned by Townsend Glover in an old Agricultural Report published in 1855. It seems pretty widely distributed through Florida and is found in company with the Oval Scale Insect (*Aspidiotus citricola*) on the eggs of which it probably feeds.

*Aphelinus of the Orange Scale.*

*Aphelinus aspidioticola*, n. sp.—Head and thorax light reddish brown; head nearly same width as thorax, three ocelli, eyes prominent, dark; antennæ three-jointed (?), the last joint is club-shaped; a dark brown spot on thorax at base of each wing; wings hyaline, both fore and hind wings ciliated from end of costal vein; no other apparent veins; a small dark reddish spot on fore wings at termination of costal vein; abdomen rather elongated, and of a darker shade of brown than the thorax, with two oblong spots of very dark brown on each side; legs rufo-testaceous, with a tibial hair at junction with tarsi. There is also a short ovipositor, hardly

perceptible. I have found numbers of the scales of *Aspidiotus citricola* with a hole perforated in the top by the *Aphelinus*, into which it crawls and lays its eggs; the larvæ on hatching feed upon the eggs of the Scale Insect. Glover also mentions having found it.

*Leaf-Scaled Coccus.*

*Lecanium phyllococcus*, n. sp.—Oval, convex, cinereous (entirely coated with a powder-like substance). Antennæ eight-jointed, inserted below and under the eyes; abdomen composed of eight or more segments; surrounding the outer edge is a series of leaf-like scales extending to the head; legs six. Length from .03 to .14 of an inch. Some are very large and nearly round, which I believe are the females ready to lay their eggs. The eggs are laid under a cotton-like substance and are elliptical, of a pale yellow color; about .02 of an inch in length. It is found in the new shoots and terminal branches.

My attention has been drawn to a strange insect by Rev. T. W. Moore, which he supposes is the cause of the Orange rust. It may be termed the Oil-eating Mite of the Orange, belonging to the genus *Typhlodromus*, and is probably the first species of this genus discovered in America.

*Typhlodromus oiliioorus*, n. sp.—Whitish, flesh color, elongate, cylindrical, gradually increasing in size until near the head it becomes twice as thick as at tail; abdomen apparently consisting of numerous very thin segments; at the extremity is a bifid appendage that evidently assists in clinging to the Orange; just above it protrude two caudal filaments; head almost entirely hidden in thorax; beak short and black; legs four, rather stout, with one claw and two tarsal hairs. It is too small to measure with my instrument, so must wait until I can get a micrometer to ascertain its length.

They attach themselves to the oil cells; as the oil exudes the chemical action of the atmosphere causes it to oxidize, and the result is a hard rusty skin. They all fall off and disappear half an hour after the fruit has been picked; hence the reason why microscopists could never detect any insect, and as a *dernier* resort, attributed the rust to a fungoid. Thus the long-vexed question of what causes the Orange rust is solved, and proves to be not a fungoid, as many suppose, but an infinitesimal creature that could never have been discovered except with the aid of a microscope.